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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/672,505	09/26/2003	James B. Tieken	9436/028	8677

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EXAMINER	
EINSMANN, MARGARET V	
ART UNIT	**PAPER NUMBER**
1751	

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/672,505	TIEKEN, JAMES B.	
	Examiner	Art Unit	
	Margaret Einsmann	1751	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 1/15/03; 12/8/03.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1,6,11 and 16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the specific hydrocarbons as listed in the specification and dependent claims, does not reasonably provide enablement for the use of any other hydrocarbons within the boiling point ranges claimed. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. There is no indication that patentee had in his possession, at the time the invention was made, compositions and processes comprising any hydrocarbon components outside of those listed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1,6,11 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The hydrocarbon component is defined in the claims by a range of boiling points. The courts have held that claims comprising components defined by physical properties alone are indefinite.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rhodia Limited, GB 2,327,427 (US equivalent is 6,428,720) in view of Matsushita Electric Industrial Co., Inc., EP 539,952.

Rhodia discloses compositions comprising pentafluoroethane (R-125) as claimed, 1,1,1,2-tetrafluoroethane (R-134a) as claimed and butane (R600) as claimed or isobutane (R600a). In the table on the top of page 6, examples 1-3 contain 46 or 46.5% of R125, 50% of R134a and 3.5 or 4% of R600 or R600a. All are in applicant's claimed amounts. The compositions are used to provide refrigeration in domestic refrigeration equipment. The application differs from the claimed subject matter in that Rhodia does not use a combination of hydrocarbons in the compositions.

Matsushita discloses refrigeration compositions comprising R125, R134a and propane (R-290) in Figure 3 and Table 3 on page 6. The compositions contain in Table 3 on page 6 contain R125 in an amount of 56.4 t0 64.6 weight %, R290 in an amount of

2.1 to 6 weight %, and R134a in an amount of 29.4 to 41.0 weight %. All are in applicant's claimed amounts.

It would have been obvious to the skilled artisan to substitute propane (R290) for a portion of the butane or isobutane in the mixture of Rhodia for the following reasons;

1. Matsushita teaches that R-290 is compatible with the mixture of R125 and R 134a

2. Propane is an excellent addition to the mixture because it is a low cost hydrocarbon which has substantially no ODP.

3. The mixture of R-290 with R125 and R134a is used for the same purpose as the Rhodia mixture of R-600 or R-600a with R125 and R134a, and it is prima facie obvious to combine two compositions to formulate a third composition to use for the same purpose.

Claims 6-10 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pearson, US 5,688,432

Pearson discloses a composition comprising (i) pentafluoroethane, (ii) tetrafluoroethane and (iii) a hydrocarbon selected from isobutane, propane and mixtures thereof. See Col 1 lines 45-49. When the mixture of isobutane and propane is used, the composition contains all of applicant's claimed components. Pearson teaches that there is 0.5 to 60% of pentafluoroethane (R125), 30-98% tetrafluoroethane (R-134a) and 1-11 percent hydrocarbon in the disclosed compositions, which includes the compositions as claimed. See column 2 lines 19-48. The reference differs from the

claims only in that there is no working example of a composition using the combination of isobutane with propane. It would have been obvious to the skilled artisan to use the combination as disclosed because it is clearly disclosed in column one, and all disclosures of a reference are valid. A reference is not limited to its preferred embodiments.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Singh et al., US 6,526,764 B1. Singh et al. disclose compositions for refrigeration comprising the claimed R125, R134a and R-32 combined with hydrocarbon components as claimed. Singh uses the commercially available mixtures listed in Table III in column 5 (which are applicant's claimed (a), (b) and (c) components in claim 1 and components (a) and (b) in claim 6), and mixes said commercially available refrigerant mixtures with hydrocarbon solubilizing agents as claimed. Mixtures 407A, 407B, 407C and 407D are mixtures containing R125, R134a and R32. 407B contains the above components (R125, R134a and R32) in the amounts as claimed in the four independent claims of this application; see col 5 line 44. Also Mixture 2 on Table IV reads on the claimed refrigerant mixtures. All of the claimed hydrocarbons listed in (d)of claim 1 or in (c) of claim 6 are listed as the solubilizing agents in Table II bridging columns 4 and 5. Singh et al. state in column 3 lines 23-50 that any one of the solubilizing agents in Table II **or mixtures thereof** are mixed with said refrigerants (or the known refrigerant mixtures as listed in Table III) in an amount of 0.1 to 20 weight percent of solubilizing agent or mixture thereof. Note that Table II lists, methane,

ethane, propane, butane, isobutene and pentane (col 4 lines 56-60) and propylene in col 5 line 23. All are claimed herein. Note that Singh's claims 1-4 read on the instant claims.

The reference differs from the claims only in that there is no working example of a composition using the combinations as claimed. It would have been obvious to the skilled artisan to use the combinations as disclosed because Singh clearly discloses using the mixture of a-d as claimed in claim 1 and a-c as claimed in claim 6 and using said mixtures in refrigeration applications, and all disclosures of a reference are valid. A reference is not limited to its preferred embodiments.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Feiring et al., US 6,299,792 B1. Feiring et al. disclose compositions of refrigerants mixed with up to 10% of at least one C_3 to C_5 hydrocarbon. In column 3 he discloses a list of useable refrigerants including the commercially available R-407B, which is a mixture of R-32/R-125/R-134a (10/70/20) as claimed. When R-407B is mixed with the mixture of C3-C5 hydrocarbons Feiring discloses in col 4 lines 1-5, applicant's claimed compositions are included. See Singh col 5 line 43 for the composition of R-407B. The reference differs from the claims only in that there is no working example of a composition using the combination of R-407B with the two claimed hydrocarbons. It would have been obvious to the skilled artisan to use the combination as disclosed because Feiring teaches that one mixes R-407B with a mixture of hydrocarbons to form a composition useful as a refrigerant, and all disclosures of a reference are valid. A

reference is not limited to its preferred embodiments.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Margaret Einsmann whose telephone number is 571-272-1314. The examiner can normally be reached on 7:00 AM -4:30 PM M-Th and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Margaret Einsmann

Margaret Einsmann
Primary Examiner
Art Unit 1751

July 20, 2004